OMB Control No. 2060-0328
Expires 07/31/2011

Annual Report 2010

Production Sector

Company Information

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Annual Report Summary

- ☐ BMP 1: Identify and replace high-bleed pneumatic devices
- ☐ BMP 2: Install flash tank separators on glycol dehydrators
- ☒ Partner Reported Opportunities *(please specify):*

Green Completions, Automated Shut-in Cycle and Plunger Lift for Well Unloading, "Smart" Automation Well Unloading and Plunger Lift Control, Pneumatic Pump Replacment, Microturbine installations, Green Completion - Reverse Circulation well cleanout

Period covered by report: From: 1/1/2010 To: 12/31/2010

Partner Signature Required: I hereby certify the accuracy of the data contained in this report. Nikhil Shenoi

Date: 5/12/11

- Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.
- In addition to reporting methane emissions reductions, you are welcome to include other information about your company's participation in Natural Gas STAR in the "Additional Program Accomplishments" section of this form. The Natural Gas STAR Program will use any information entered in this section to recognize the efforts and accomplishments of outstanding partners.

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Partner Reported Opportunities (PROs)

(For more details on PROs, visit epa.gov/gasstar/tools/recommended.html)

Current Year Activities

A. Facility/location identifier information: Greater Green River Basin of Wyoming (Wamsutter and Jonah fields)

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):	Please describe how your company implemented this activity:
Green Completions	This project is a change in well clean-up and completion procedures to collect and sell gas rather than flaring while cleaning up and flow testing new and recompleted wells.

C. Level of Implementation *(check one)*:

- ☐ Number of units installed: _____ units
- ☐ Frequency of practice: _____ times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☒ **One-year** ☐ **Multi-year**

If Multi-year:

- ☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.
- ☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: ——— 11,671 Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ 281,000

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☒ Actual field measurement

☒ Other (*please specify):*

☐ Calculation using manufacturer specifications/other source

Actual metered flow rates were used with the methane calculated using the EPA's flare efficiency factor of 98% destruction (2% methane slip, CH4 88.6 mol%). Actual gas sold rather than flared was 680,983 mcf. This process also eliminated 43,661 tons of CO2 emissions.

G. Total value of gas saved: $ **44,584 ($3.82/Mcf)**

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. To what extent do you expect to implement this practice next year? We have used this practice on most new/recompleted wells in the target fields in 2010.

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

PRO Comments:

* Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

Partner Reported Opportunities (PROs)

(For more details on PROs, visit epa.gov/gasstar/tools/recommended.html)

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Current Year Activities

A. Facility/location identifier information: Wamsutter, Wyoming

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):

Automated Shut-in Cycles and plunger lifts for well unloading

Please describe how your company implemented this activity:
Well venting to unload liquids from well-bores is a significant source of methane emissions. In our Wamsutter field of Wyoming, we begin installing automated shut in cycle units in 2006. These units shut-in wells, based on flow algorithms, to enable pressure build-up and wellbore liquids unloading rather than venting the wells to atmosphere. The well response has been positive and has virtually eliminated venting for liquids unloading on wells equipped thus far. In 2010 we installed 144 shut-in cycles and 57 plungers.

C. Level of Implementation *(check one)*:

☒ Number of units installed: 144 Units
☐ Frequency of practice: _____ times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☒ **One-year** ☐ **Multi-year**
If Multi-year:
☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.
☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: ———
108,391 Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ 1,240,500

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement
☒ Other (*please specify):*
☐ Calculation using manufacturer specifications/other source

Pressure transient modeling was used to determine the vent rate during well unloading. The reduction is based on change in total venting versus 2005 baseline venting levels prior to installation of the shut-in cycle units. The amount of venting is tracked as minutes and converted to volume. The volume reported is the total reduced in 2010 vs. the baseline prior to project start. The intent is to report total volume annually against the pre project baseline (2005). CH4 85.3 mol%

G. Total value of gas saved: $ **414,054** @ **$3.82**

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. To what extent do you expect to implement this practice next year? Total reductions against the baseline prior to project inception will be reported annually. Progress in further reductions will be maintained. The units installed will continue to deliver reductions in future years against the 2005 baseline.

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

PRO Comments:

* Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

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Partner Reported Opportunities (PROs)

(For more details on PROs, visit epa.gov/gasstar/tools/recommended.html)

Current Year Activities

A. Facility/location identifier information: North West New Mexico

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):

"Smart" Automation well and plunger controllers to reduce well venting for liquids unloading

Please describe how your company implemented this activity: Well venting to unload liquids from well-bores is identified as a significant source of methane emissions. In our NW New Mexico operations, we began installing "Smart" automation well and plunger system controllers in 2000 with the system becoming operational (phased) in mid 2001. Since becoming fully operational in mid 2002 we have been further improving the control algorithims and optimizing system performance. In mid 2006 we made significant improvement in the well control algorithms and practices which yielded a significant increase in reduction percentage in 2006 and thereafter.

C. Level of Implementation *(check one)*:

☒ Number of units installed: 2153 units
☐ Frequency of practice: _____ times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☒ **One-year** ☐ **Multi-year**

If Multi-year:

☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.

☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: ———
3,425,071 Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ 12.2 MM (one time cost in 2000-2001)

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement

☐ Other (*please specify):*

☐ Calculation using manufacturer specifications/other source

Measurement to determine the amount of venting from wells in each producing formation was conducted. The amount of venting is tracked daily, and summed monthly, quarterly and annually. Gas has CH4 85.09 mol%. The volume reported is the total reduced in 2010 vs. the baseline prior to project start. The intent is to report total volume annually against the pre project baseline (2000).

G. Total value of gas saved: $ **13.084 MM @ $3.82**

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. To what extent do you expect to implement this practice next year? Total reductions against the baseline prior to project inception will be reported annually. Progress in further reductions will be maintained.

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

PRO Comments:

* Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates."

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Partner Reported Opportunities (PROs)

(For more details on PROs, visit epa.gov/gasstar/tools/recommended.html)

Current Year Activities

A. Facility/location identifier information: Moxa Arch Field of Wyoming

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):

Solar Methanol Pump Replacement

Please describe how your company implemented this activity:

This project is the replacement of pneumatic gas driven methanol and chemical pumps with solar powered units in our Moxa Arch Field of Wyoming.

C. Level of Implementation *(check one)*:

☒ Number of units installed: 544 Units
☐ Frequency of practice: _____ times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☒ **One-year** ☐ **Multi-year**

If Multi-year:

☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.

☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: ———
18,771 Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ 1.8 MM

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement

☐ Other (*please specify):*

☒ Calculation using manufacturer specifications/other source

Pump curves coupled with methanol use were used to determine the volume saved. Using 5-years of this data an EF was developed for methane reductions/solar pump which was used to estimate emission reductions for the current year. The volumes included are full year. Natural gas has CH4 90.15 mol%

G. Total value of gas saved: $ **71,707 @ 3.82**

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. To what extent do you expect to implement this practice next year? We are continuing to replace pneumatic gas driven pumps with solar powered pumps. In 2010 we installed 58 additional solar methanol systems.

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)

PRO Comments:

- Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

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Partner Reported Opportunities (PROs)

(For more details on PROs, visit epa.gov/gasstar/tools/recommended.html)

Current Year Activities

A. Facility/location identifier information: Moxa Arch Field of Wyoming

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):

Solar ethylene glycol pump replacement

Please describe how your company implemented this activity:

This project is the replacement of gas driven diaphragm pumps with solar pumps in our Moxa Arch Field of Wyoming. Ethylene glycol pumps are used for heat tracing.

C. Level of Implementation *(check one)*:

☒ Number of units installed: 126 Units
☐ Frequency of practice: _____ times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☒ **One-year** ☐ **Multi-year**

If Multi-year:

☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.

☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: ———
257,052 Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ 1.267 MM

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement

☐ Other (*please specify):*

☒ Calculation using manufacturer specifications/other source

Solar EG pumps replace diaphragm EG pumps resulting in reduced emissions. Based on measurements from 15 wells and diaphragm pump curves each gas pump uses 6.2 mcfd (yearly average). The volumes included are full year. Natural gas has CH4 90.15 mol%

G. Total value of gas saved: $ **981,938 @ 3.82**

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. To what extent do you expect to implement this practice next year? We are continuing to replace diaphragm gas driven pumps with solar powered pumps. In 2010 we installed 50 additional solar EG systems.

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)
2009	76 (58 new)	767,000	155,047	463,591 @ 2.99
2008	18	216,000	36,722	243,098 @ 6.62

PRO Comments:

- Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

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Partner Reported Opportunities (PROs)

(For more details on PROs, visit epa.gov/gasstar/tools/recommended.html)

Current Year Activities

A. Facility/location identifier information: Jonah Field in Wyoming

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):	Please describe how your company implemented this activity:
Microturbine installation	Microturbines are used to electrify remote wellsite equipment and replace pneumatic natural gas driven pumps. They use a small amount of fuel gas to generate 20 KW of power to run glycol heat tracing pumps at our Jonah Field in Wyoming.

C. Level of Implementation *(check one)*:

☒ Number of units installed: 7 Units
Frequency of practice: _____ times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☒ **One-year** ☐ **Multi-year**

If Multi-year:

☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.

☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: ———
37,069 Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ 1.8 MM

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement

☐ Other (*please specify):*

☒ Calculation using manufacturer specifications/other source

7 Microturbines were operational. Each microturbine displaces 4-6 pneumatic pumps. Emission reductions were calculated by subtracting actual fuel used by microturbines from volume of natural gas that would be used by pneumatic pumps for the same number of operating hours. Natural gas has CH4 88.58 mol%

G. Total value of gas saved: $ **141,604 @ 3.82**

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. To what extent do you expect to implement this practice next year? We are continuing our program of installing microturbines at the Jonah field.

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)
2009	3	774,000	41,549	124,232 @ 2.99

PRO Comments:

- Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

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Partner Reported Opportunities (PROs)

(For more details on PROs, visit epa.gov/gasstar/tools/recommended.html)

Current Year Activities

A. Facility/location identifier information: San Juan Basin of South West Colorado (San Juan North field)

B. Activity description: Please provide a separate PRO reporting form for each activity reported. If reporting a DI&M activity, please use a separate page for each location/facility surveyed.

Please specify the technology or practice that was implemented (choose from the list in the appendix or describe your own):	Please describe how your company implemented this activity:
Green Completion - Overbalanced Reverse Circulation Cleanout	This project is a change in well clean-up and completion procedures using an overbalanced cleanout method to eliminate gas migration into the wellbore and venting to the atmosphere during completion of new drilled (CBM) wells.

C. Level of Implementation *(check one)*:

☒ Number of units installed: 32 units
☐ Frequency of practice: _____ times/year

D. Are emissions reductions a one-year reduction or a multi-year reduction? ☐ **One-year** ☐ **Multi-year**

If Multi-year:

☐ Partner will report this activity once and let EPA automatically calculate future emission reductions based on sunset date duration*.

☐ Partner will report this activity annually up to allowed sunset date.

E. Methane emissions reduction: ———
42,470 Mcf

F. Cost summary: Estimated cost of implementing this practice/activity *(including equipment and labor)*: $ 288,000

Please identify the basis for the emissions reduction estimate, using the space provided to show any calculations

☐ Actual field measurement

☒ Other (*please specify):*

☐ Calculation using manufacturer specifications/other source

Estimated vent reduction of approximately 1400 MCF/well. Estimate was developed based on using air (underbalanced) to cleanout the wellbore. (7 days for cleanout/completion using air, 10hr work day, 500 Mcfd average production new well). Using water (overbalanced) for reverse circulation eliminates venting and completion takes 1 day. CH4 94.8% mol

G. Total value of gas saved: $ **162,237 ($3.82/Mcf)**

Total value of gas saved = Methane emissions reduction (in Mcf) x Gas value (in $/Mcf) [If not known, use default of $7.00/Mcf]

H. To what extent do you expect to implement this practice next year? We plan to continue using this practice to cleanout wells in the San Juan North field.

Previous Years' Activities

Use the table below to report any past implementation of this PRO, but not previously reported to Natural Gas STAR

Year	Frequency of Practice/Activity or # of Installations	Total Cost of Practice/Activity (incl. equipment and labor) ($)	Estimated Reductions (Mcf/yr)	Value of Gas Saved ($)
2009	56	$504,000	74,323	$222,226 @$2.99

PRO Comments:

* Because the implementation of some technologies reduces emissions for multiple years, Gas STAR allows certain activities to count towards a company's emission reductions beyond the initial year of implementation. Gas STAR designates the maximum length of time that these reductions may accrue as "sunset dates." The Appendix lists these sunset dates. Companies can report the corresponding methane emission reductions each year up to the allowable sunset date. Or, companies may wish to report reductions only once for the implementation year, and have EPA automatically apply the sunset date and count those emissions for the allowable number of years.

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Additional Program Accomplishments

The Natural Gas STAR Program will use any information entered here to recognize the efforts and achievements of outstanding partners.

Please include any additional information you would like to share about your company's participation in Natural Gas STAR. Examples may include:

- **Activities to strengthen your program (e.g., training/education, innovative technologies or activities, pilot projects, employee incentive programs).**
- **Efforts to communicate your participation and successes (e.g., internal newsletters, press releases, company Web site).**

Participation in Natural Gas STAR program activities (e.g., contributions to case studies, presentation at annual workshop).

Additional Accomplishments:

Additional Accomplishments Comments: *Please use the back of the page for additional space if needed.*

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Appendix

Methane Emission Reduction Technologies & Practices— Production Sector

The list below describes a variety of methane emission reduction technologies that Natural Gas STAR partners in the production sector have implemented and reported to Natural Gas STAR. You may use this list as a guide when completing your annual report. Sunset dates (i.e., the length of time a technology or practice can continue to accrue emission reductions after implemented) are one year in duration unless otherwise noted in parentheses. An asterisk (*) indicates that a technical document related to the technology or practice is available online at epa.gov/gasstar/tools/recommended.html.

Compressors/Engines

- Automate systems operation to reduce venting*
- Automated air/fuel ratio controls (10 years)*
- Catalytic converter installation (10 years)
- Convert engine starting to nitrogen (10 years)*
- Convert to low pressure compressor starters (10 years)
- Eliminate unnecessary equipment and/or systems*
- Increase compression capacity to reduce venting/flaring
- Install electric compressors (10 years)*
- Install electric motors (10 years)
- Install lean burn compressor (10 years)
- Redesign blowdown systems and alter ESD practices*
- Reducing emissions when taking compressors off-line*
- Reducing methane emissions from compressor rod packing systems*
- Replace gas starters with air (10 years)*
- Replace ignition - reduce false starts*
- Turbine fuel use optimization

Dehydrators

- Install condensers on glycol dehydrators (10 years)
- Optimize glycol circulation and install of flash tank separators in dehydrators*
- Replacing gas-assisted glycol pumps with electric pumps (10 years)*
- Replacing glycol dehydrators with desiccant dehydrators (10 years)*
- Reroute glycol skimmer gas*
- Shutdown glycol dehydrator stripping gas in winter

Directed Inspection and Maintenance

- DI&M at compressor stations*
- DI&M: leak detection using lower emission threshold
- DI&M: survey and repair leaks

Pipelines

- Inject blowdown gas into low pressure mains*
- Pipeline replacement and repair
- Using pipeline pumpdown techniques to lower gas line pressure before maintenance *

Pneumatics/Controls

- Capture/use gas released from gas-operated pneumatic pumps
- Convert gas pneumatic controls to instrument air (10 years)*
- Convert gas-driven chemical pumps to instrument air (10 years)*
- Convert pneumatics to mechanical controls (10 years)*
- Install controllers on gas-assisted methanol pump (10 years)
- Install electronic flare ignition devices (10 years)*
- Install no bleed controllers (10 years)
- Install non-venting dump controllers (10 years)
- Reduce gas pressure on pneumatic devices
- Use add-on controls to reduce emissions from pneumatics (10 years)

Tanks

- Consolidate crude oil production and water storage tanks (10 years)*
- Convert water tank blanket from natural gas to produced CO2 gas (10 years)*
- Install evactors (10 years)
- Install flash gas compressors (10 years)
- Install hydrocarbon liquid stabilizer (10 years)
- Install pressurized storage of condensate (10 years)*
- Installing VRUs on crude oil storage tanks (10 years)*
- Protective tank coatings to reduce leaks (10 years)
- Recycle line recovers gas during condensate loading*
- Reduce excess blanket gas blow-by to the atmosphere

Appendix (cont.)

Valves

- Install BASO valves (10 years)*
- Install plugs on valves and open ended lines (10 years)
- Test and repair pressure safety valves

Wells

- Artificial lift: gas lift (10 years)
- Artificial lift: pressure swabbing
- Connect casing to vapor recovery unit *OR* Install compressors to capture casinghead gas (10 years)*
- Gas well "smart" automation system (10 years)*
- Gas well unloading time optimization*
- Perform reduced emissions completions/green completions*
- Install automated shut-in cycle units to reduce well venting (10 years)
- Install flash tank separator on water gathering system (10 years)
- Install pumpjacks on low water production gas wells (10 years)*
- Install pumps for separators (10 years)
- Install soap launcher/soap unit (10 years)
- Install velocity tubing strings (10 years)*
- Installing plunger lift systems at gas wells (10 years)*
- Lower heater-treater temperature*
- Use foaming agents*

Other

- Capture and use waste heat to reduce gas usage and emissions
- Convert natural gas fired generator to solar power (10 years)
- Flare reduction program
- Install flares (10 years)*
- Nitrogen rejection unit optimization*
- Recover gas from separators
- Re-inject gas for enhanced oil recovery
- Re-inject gas into crude
- Replace aged heaters with new efficient gas fired heaters (10 years)